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ABSTRACT

School psychologists spend between 40-60% of their time in assessment activities. Methods for improving the diagnostic process are addressed in this paper. Techniques mentioned to improve the process include the actuarial method, the multitrait multimethod approach to multifactored assessment, and direct instruction in reasoning and decision making. In addition, the changing role of the school psychologist in relation to assessment is discussed. The role traditional assessment still has in a school psychology practice is presented, suggesting that there is a need to refine and improve that process rather than discard it. The claim is made that the key to keeping school psychologists in the school setting is the expansion of their training in order to provide more varied services to the entire school community. (Contains 38 references.) (TS)

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TECHNIQUES FOR IMPROVING THE DIAGNOSTIC PROCESS

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TECHNIQUES FOR IMPROVING THE DIAGNOSTIC PROCESS

School psychologists spend between 40%-60% of their time in assessment activities (Anderson, Cancelli, & Kratochwill, 1984; Gutkin & Conoley, 1990). However, there is abundant research which indicates that assessment practices vary between states, districts, and individual practitioners (McDermott, 1980).

The school psychology literature encourages expanded roles for school psychologists, reduced emphasis on training in assessment, and more training in consultation skills (Fagan, 1986, 1989; Grimes, 1989). However, in the majority of school districts, assessment continues to consume a significant amount of time for school psychologists. The Whelan and Carlson (1986) review of books in school psychology from 1970 to 1986 led to the observation, "Rather than assuming diminishing importance, as anticipated by the literature of the early 1970's, assessment functions have broaden in scope and sophistication" (p.286).

This paper will address methods to improve the diagnostic process. It is important to remember that under examination in this paper is the diagnostic process. This means that from the

time of referral to the time of the eligibility conference techniques can be employed to improve that process.

Some techniques that will be introduced include: 1. Statistical or Actuarial Methods of Assessment; 2. Multitrait-Multimethod Approach to Multifactored Assessment (MTMM); and Direct Instruction in Reasoning and Decision Making. In addition, discussion about the changing role of the School Psychologist in relation to assessment will be examined.

STATISTICAL OR ACTUARIAL METHODS OF ASSESSMENT

The statistical or actuarial method of assessment is a manner of combining data in an automatic or routinized manner based upon previously established, empirically derived relations. Actuarial methods have two major advantages. First, actuarial procedures always lead to the same conclusion for a given data set. Second, the mathematical features of actuarial methods ensure that variables contribute to conclusions based on their actual predictive powers and relation to the criterion of interest.

Achenbach & McConaughy (1987) listed psychometric principles as they apply to assessment. These principles were summarized as follows:

1. Assessment should employ standardized procedures.

2. Multiple items should be used to sample each aspect of functioning.
3. Items should be aggregated to provide quantitative scores for each aspect of functioning.
4. Scores should be normed to indicate how an individual compares with relevant reference groups.
5. For variables potentially related to development, the normative reference group should be formed according to age levels or other indices of development.
6. To be considered psychometrically sound, assessment procedures must be reliable and valid, although the types of reliability and validity vary with the type of procedure (p. 13).

Dawes (1988) reported: "the finding that linear combination is superior to global judgment is strong: it has been replicated in diverse contexts, and no exception has been discovered" (p.209). The actuarial method has time and again proven superior to expert clinical judgment (Dawes, 1988). Even improper linear models have been found to be superior to clinical judgment (Dawes, Faust, & Meehl, 1989; Piacentini, Cohen, & Cohen, 1992). Although the actuarial method of assessment may be superior to the clinical method of assessment, it too, achieves only modest results, Macmann, Barnett, Lombard, Belton-Kocher, and Sharpe (1989) wrote: "it does not appear that the classification

problem can be resolved through better statistical formulas" (p.143). Later they added: "Quite simply there does not appear to be an objective basis for diagnostic classification" (p. 145).

In spite of this finding, many continue to argue that there is a place for statistical applications in psychoeducational evaluations (Dawes, 1988; Dawes, Faust, & Meehl, 1989; McDermott, 1980, 1981, 1986). At the very least, clinical and statistical methods can be integrated in a way that draws upon the strengths of each methodology and counteracts the weaknesses of each (Sicoly, 1989). Several psychoeducational assessment instruments have recently been developed using actuarial principles. These include the revision of the MMPI and the Achenbach scales. These instruments are the first steps in the emergence of the actuarial method of test construction.

Several software programs based upon statistical methods have been developed. The McDermott Multidimensional Assessment of Children (M-MAC), (McDermott & Watkins, 1985) is an example of a computerized, statistically based diagnostic decision aid. This instrument should not be seen as the final word on any diagnostic question, but it can be used as an aid in making diagnostic decisions. In particular, it may assist in overcoming the problem associated with the unreliable manner of combining data from different sources to make diagnostic decisions. The M-MAC reliably combines test information from a variety of

settings, which increases reliability and, when interpreted properly, should increase the validity of the decision making process.

Glutting (1986) wrote: "Perhaps M-MAC's greatest contribution to child exceptionality is its reliability. Research had demonstrated repeatedly that classifications tend to be unreliable, both across and within specialists" (p. 334).

Unfortunately, a revision of the M-MAC to include updated assessment instruments (i.e. WISC-III) was cancelled because of technical difficulties with the work (APA, 1994).

MULTITRAIT MULTIMETHOD APPROACH TO MULTIFACTORED ASSESSMENT

Gresham (1983) has suggested the use of a multitrait-multimethod (MTMM) approach to assessment as a means of overcoming assessment problems. This method is based on Campbell and Fiske's (1959) multitrait-multimethod means of establishing the construct validity of psychological and educational tests.

Scoring from measuring instruments are often affected by variables other than the trait being assessed by the instrument. Sometimes scores are more influenced by the person administering the instrument or the type of assessment device being used than by the trait being assessed. For example, when being interviewed about their interests, students may respond in one manner to

their parents, in another manner to their guidance counselor, and in still a different manner to their friends. In such an instance, the results of the interview may be a function of the "interviewer" rather than of the trait being assessed by the interview. Campbell and Fiske (1959) use the terms "trait" variance and "method" variance to differentiate between the extent to which scores on a measuring instrument are influenced by: a. the trait being assessed and b. the method used to assess the trait. Clearly, it is desirable to have trait variance exceed method variance. That is, the validity of the scores yielded by various assessment techniques can be evaluated by using multiple techniques (methods) to assess multiple traits and then evaluating the extent to which these various scores agree with one another. Validity exists when there are higher correlations between different methods of assessing the same trait than there are between the same methods of assessing different traits. In summary, different methods of measuring the same trait should converge on that trait and account for more variance in measurement than the same method of measuring different traits (Gresham, 1983).

The MTMM approach to assessment can be applied by school psychologists' to "assess" the validity of the assessment techniques being utilized and to improve the reliability and validity of the overall assessment process. In particular, the

MTMM approach can be used to overcome the problem of technically inadequate tests.

Consider the following example cited by Levinson (1993): Assume that an interest inventory that possesses less than desirable reliability and validity was used in an assessment, and that the results indicated high interest in automotive mechanics. Although it would be inadvisable to place much confidence in the interest inventory results alone, assume that the student had also indicated high interest in automobile mechanics in an interview with a guidance counselor and had been observed rebuilding car engines by parents and teachers. That multiple methods of assessing interests (tests, interviews, observations) all yielded similar results suggests that the interest inventory results, in this instance, may be reliable and valid. Had there not been agreement among the results of these different assessment techniques, the validity of the assessments would be in question, and considerably less confidence could be placed in the results.

Relatedly, the extent to which assessment data may be a function of the individual gathering the data (or the interaction between the student and the data gathered) can also be evaluated by ensuring that different professionals are responsible for gathering similar information about a student using similar assessment techniques. That is, if both a school psychologist

and a teacher were to interview a student about his or her interests and both were to conclude that the student was interested in automotive mechanics, greater confidence could be placed in this consultation than would be the case if only the school psychologist had interviewed the student. In contrast, if what the teacher and school psychologist concluded from interviewing the student differed, considerably less confidence could be placed in this data. In this instance, one might infer that the student's responses may have been influenced by the interviewer. The school psychologist should also look for corroboration by trying to determine whether the behavior occurs across situations or environments. Obviously, it is extremely risky to base psychoeducational decisions on one sample of behavior or one test performance.

DIRECT INSTRUCTION IN REASONING AND DECISION MAKING

The research concerning direct instruction in psychoeducational decision making is scarce and the findings are mixed (Fagley & Asher-Schultz, 1987; Fagley & Kruger, 1986; Shavelson et al., 1977). However, recent research suggests that certain types of academic training seems to have a significant effect on thinking about everyday life events

(Lehman, Lempert, and Nisbett, 1988).

Hernstein, Nickerson, DeSanchez, and Swets (1986) and Nickerson, Perkins, and Smith (1985) have shown that strategies of reasoning can even be taught to elementary school children. Such training not only improves performance on IQ tests but also improves the quality of children's open ended arguments. Arkes (1981) suggested several possible techniques to minimize bias for clinical psychologists, such as considering alternative hypotheses for a long period of time, using probabilistic information like base rates, and decreasing reliance on memory by taking notes.

The objective is to formulate a plan of action which conceptualizes the problem broadly enough to present a suitable range of alternative paths toward a correct solution.

Instructional methods which have been found effective in aiding problem solving are those which focus on development of sound mental models. One instructional method taken from the work of Redding (1990) is presented below:

1. Representation can be enhanced by providing advance organizers (Ausubel, 1960) prior to task presentation.

2. Graphic representations of problems should be used whenever possible, in conjunction with verbal descriptions.
3. Knowledge should be provided in hierarchical structures. Hierarchical organization is one of the most powerful heruistics for organization information. The human information-processing system is organized and stored hierarchically in memory (Redding, 1990). Information is organized in terms of subordinate, basic-level, and superordinate concepts (Rosch, Mervis, Gray, Johnson, & Boyes-Braen, 1976). Children learn basic-level concepts first and with greatest ease (Mervis & Crisafi, 1982). It may follow that adults learn new information when it is presented at some "optimal level" of organization.
4. Problem-solving training should be organized around "problem types" to facilitate memory organization (DeJong & Hessler, 1986).
5. Subgoals and the procedure for reaching them should be provided.
6. In sequencing instruction of problem solving steps, the instructor should guide the student by shifting to new problem states or subgoals rather than regressing to previous ones.

7. Instruction by way of analogy to similar problems should be encouraged, but the analogies must be simple and explicit (Reed, Ernst, & Banerji, 1974).

8. Flexibility in problem solving should be taught by encouraging active student participation, questioning, and experimentation. Students should understand that different problem situations will require adaptability and modification of prior mental models and heuristics. Students must be encouraged to practice their skills and strategies in multiple contexts and ranges of complexity.

Although more research is needed, particularly in regard to the effect of direct instruction in reasoning and decision making for school psychologists, the incorporation of direct instruction in school psychology training programs may prove helpful.

OTHER STRATEGIES

To reduce problems associated with the use of inconsistent decision making rules and varying theoretical orientations,

McDermott (1981) urged training programs to use techniques like Thorne's (1970) "Psychological Twenty Questions", which is like a game of twenty questions where students learn how to gather information effectively. The "Psychological Twenty Questions" is a formal device for the teaching and objective measurement of psychological interviewing. A selected set of 20 protocols was constructed giving instructions for one person to play the part of the client. The student interviewer is allowed 20 series of questions or a 50 minute interview in which to elicit significant cues and facts as given in the protocol of the case. Two methods of scoring are available involving either the gross number of lines of questioning needed to elicit the required facts, or the absolute number of facts elicited during the 50 minute interview.

Engin and Miller's (1975) multimedia simulation, titled "PSYCHISM", places students in simulated real-world situations and asked them to make the best possible decisions. Simulation allows participants to "try out" possible behavioral alternatives in a relatively non-threatening situation where errors can be examined and behavior modified. Simulation can be viewed as one way of executing a more carefully planned transition from didactic instruction to the internship experience in school psychology. "PSYCHISM" is based on the supposition that enacted response experiences will best prepare the participant to respond to the actual situation. Optimal transfer of learning should

occur when both the stimulus and the response situation of instruction closely approximate the real situation.

McDermott (1981) also noted that the programmed case study, which is a hybrid of programmed instruction and the case study, has been shown to maximize the diagnostic accuracy of both nomothetically and idiographically oriented diagnosticians (Dailey, 1971; Fancher, 1966). Standardization in the evaluation procedure has also manifested itself in diagnostic models in psychiatry (Spitzer & Endicott, 1974; Spitzer, Endicott, Cohen, & Fleiss, 1974) and clinical psychology (Nathan, 1967). McDermott and Watkin's (1985) multidimensional actuarial classification system (M-MAC) is a similar attempt at standardization in school psychology. Use of these techniques may help school psychologists become more sensitive to the problems encountered when trying to gather the information necessary to make a diagnosis, and might help standardize the method that school psychologists use when trying to obtain information.

THE SCHOOL PSYCHOLOGIST'S RELATIONSHIP TO ASSESSMENT

The task of assessment for the school psychologist is an arduous one. Where once the stock and trade of the psychologist in the school was assessment, today there is a substantial

lack of support for that role in the literature. It is also evident that more focus in training programs needs to be on intervention and consultation, but the problems inherent in assessment will not disappear if we ignore them. Certainly, even before one makes a behavioral intervention, an assessment of the situation and the environment needs to be made.

Training in assessment and, equally important, the interventions that spring forth from the assessment, need further scrutiny. It is not correct to say school psychological assessment is invalid and must be discontinued. It is more correct say that there are areas where psychological and psychiatric assessment is flawed. We must work to improve in those areas.

It is my contention that psychological evaluations will be read if they contain information that teachers, parents, and other professionals can use. It is also my contention that when equivocal judgments are made by school psychologists, they need to be plainly stated in the report.

A proper assessment helps "frame" the possible interventions that can be made. An assessment should not be looked at as etched in stone, but rather as a snapshot in the moving current of a child's life. Change, which I believe to be the raison d'etre for therapy and interventions of any sort, should also be reflected in the reports we write. Contradictions in measures

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may not be indictments of the psychological tools we use but accurate reflections of human personality. Let's not forget the words of Walt Whitman who writes:

> "Do I contradict myself?
> Very well then ... I contradict myself;
> I am large ... I contain multitudes".

Human functioning is much like what Whitman writes about in his poetry. Human existence is a highly complex, complicated affair replete with contradictions. School psychologists must be acquainted with the ebb and flow and ever changing tides of life. Our students live their lives in three dimensions and our reports must begin to reflect the subjectivity that involves any human interaction.

The focus on intervention that many recent theorists so eloquently write about carries within it the implicit assumption of assessment. As previously mentioned, in any problem-solving model there needs to be an assessment phase to determine what, if any, intervention can be implemented.

In addition, when working on assessments it's important not to lose sight of the purpose of the evaluation. What will classification of this student afford him or her in terms of services. The key to any assessment is the amelioration of

difficulties. It may be that school psychologists' can serve their school communities more efficiently by providing not only traditional assessments but also by providing support and consultation to everyone involved in the school community.

Changes are taking place in the school environment and school psychologists' must expand their roles. However, the key to keeping the psychologist in the school is by adding more behavioral flexibility and training so school psychologists' remain a critical resource in the school culture.

SUMMARY

This paper addressed methods to improve the diagnostic process. Techniques mentioned to improve the process included: the actuarial method, the multitrait multimethod approach to multifactored assessment, and direct instruction in reasoning and decision making. In addition, the changing role of the school psychologist in relation to assessment was discussed.

The paper also discussed the role traditional assessment still has in a school psychology practice. It was suggested that there is a need to refine and improve that process rather than discard it. It was also suggested that the key to keeping school

psychologists' in the school setting is by expanding their training to provide more varied services to the entire school community.

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